1. (Amended) An occupant restraint apparatus for installation in a vehicle, comprising:

an airbag; and

an inflator including:

a combustion chamber in fluid communication with the airbag;

a reservoir containing a liquid propellant;

a port fluidically interconnecting the combustion chamber and the liquid propellant reservoir;

an inflation initiator operable, in response to an accident involving the vehicle, to pressurize the liquid propellant reservoir, such that the liquid propellant is injected through the port into the combustion chamber for ignition and generation of combustion gases to inflate the airbag;

a sensor for generating a signal indicative of an accident parameter; and

an inflation rate modulator <u>including rheological fluid, the inflation rate modulator</u> controlling the inflation initiator and, thereafter, varying a combustion rate of the liquid propellant in the combustion chamber in accordance with the sensor signal, thereby regulating an inflation rate of the airbag.

3. (Amended) The apparatus of claim 2, <u>wherein the inflation rate modulator</u> further [comprising] <u>comprises</u> a damping chamber containing [a hydraulic] <u>the rheological</u> fluid for developing a damping force retarding the piston pumping stroke[, the inflation rate modulator acting to vary the damping force].

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4. (Amended) The apparatus of claim 3, wherein [the hydraulic fluid is a rheological fluid and] the inflation rate modulator acts to vary a viscosity of the rheological fluid.

14. (Amended) An airbag inflator comprising:

a housing;

a combustion chamber provided in the housing;

a reservoir provided in the housing for containing a liquid propellant;

a piston slidingly received in the housing and having a first piston head separating the combustion chamber from the liquid propellant reservoir;

an injection port;

a pyrotechnic initiator, detonated in response to a vehicle accident, to pressurize the combustion chamber and to ignite liquid propellant injected into the combustion chamber from the reservoir through the injection port during a regenerative pumping stroke of the piston, combustion of the injected liquid propellant producing airbag inflation gasses; and

a controller including rheological fluid, the controller varying a rate of the piston's regenerative pumping stroke according to at least one accident parameter, thereby regulating a rate of airbag inflation during airbag deployment.

16. (Amended) The airbag inflator of claim 15, wherein the hydraulic damper includes a damping chamber containing [a hydraulic] the rheological fluid, and the piston includes a second piston head slidingly received in the damping chamber.

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17. (Amended) The airbag inflator of claim 16, wherein the damping chamber further includes an orifice through which the [hydraulic] rheological fluid is expelled by the second piston head during the piston's regenerative pumping stroke, the controller acting to adjustably control a rate of [hydraulic] rheological fluid flow through the orifice.

18. (Amended) The airbag inflator of claim 17, wherein the [hydraulic] rheological fluid is a magneto-rheological fluid.

19. (Amended) The airbag inflator of claim [18] 17, wherein the [hydraulic] rheological fluid is a magneto-rheological fluid, and the controller further includes an electromagnet for generating a magnetic field to vary a viscosity of the magneto-rheological fluid flowing through the orifice.

29. (Amended) The airbag inflator of claim 28, wherein the [hydraulic] rheological fluid is a magneto-rheological fluid.

30. (Amended) The airbag inflator of claim [29] 28, wherein the [hydraulic] rheological fluid is a magneto-rheological fluid, and the controller further includes an electromagnet for generating a magnetic field to vary a viscosity of the magneto-rheological fluid flowing through the orifice.

32. (Amended) An airbag inflator comprising:

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a housing;

a combustion chamber provided in the housing;

a reservoir provided in the housing for containing combustible fluid;

a piston slidingly received in the housing and having a first piston head separating the combustion chamber from the combustible fluid reservoir;

an injection port;

a initiator, activated in response to a vehicle accident, to pressurize the combustion chamber and to ignite combustible fluid injected into the combustion chamber from the reservoir through the injection port during a regenerative pumping stroke of the piston, combustion of the injected combustible fluid producing airbag inflation gasses; and

a controller including at least one sensor and a rheological fluid, the controller varying a rate of the piston's regenerative pumping stroke according to at least one accident parameter, thereby regulating a rate of airbag inflation during airbag deployment.

34. (Amended) The airbag inflator of claim 33, wherein the hydraulic damper further includes a damping chamber containing [hydraulic] the rheological fluid, and the piston includes a second piston head slidingly received in the damping chamber.

35. (Amended) The airbag inflator of claim 34, wherein the damping chamber further includes an orifice through which the [hydraulic] rheological fluid is expelled by

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the second piston head during the piston's regenerative pumping stroke, the controller acting to adjustably control a rate of [hydraulic] rheological fluid flow through the orifice.

36. (Amended) The airbag inflator of claim 35, wherein the [hydraulic] rheological fluid is a magneto-rheological fluid.

37. (Amended) The airbag inflator of claim [36] 35 wherein the [hydraulic] rheological fluid is a magneto-rheological fluid, and the controller further includes and electromagnet for generating a magnetic field to vary viscosity of the magneto-rheological fluid flowing through the orifice.

39. An airbag inflator comprising:

a combustion chamber;

a reservoir containing combustible fluid;

a slidable piston located between the combustion chamber and the combustible fluid reservoir;

an injection port allowing fluid communication between the reservoir and the combustion chamber;

an initiator, activated in response to a vehicle accident, commencing a pumping stroke of the piston, the pumping stroke forcing combustible fluid into the combustion chamber from the reservoir through the injection port for combustion of the combustible fluid to produce airbag inflation gasses; and

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a controllable hydraulic damper assembly in communication with the piston to selectively vary the speed of the piston during its pumping stroke, the hydraulic damper assembly including rheological fluid.

40. The airbag inflator according to claim 39, wherein the controllable hydraulic damper assembly includes an orifice and a portion of the rheological fluid is forced through the orifice by the piston during the pumping stroke.

41. The airbag inflator according to claim 40, wherein the rheological fluid is magneto-rheological fluid, and the hydraulic damper assembly further includes a selectively controllable electromagnet assembly, the electromagnet assembly capable of creating a controllable magnetic field to vary the viscosity of at least a portion of the magneto-rheological fluid flowing through the orifice during the pumping stroke.

42. The airbag inflator of claim 41, further including a central processing unit capable of receiving at least one sensor input, the central processing unit providing control signals to the electromagnet assembly.

43. The airbag inflator of claim 42, wherein the at least one sensor input is provided by a plurality of sensors, the plurality of sensors producing signals respectively indicative of occupant and collision parameters.

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